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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/942,718	08/31/2001	Masataka Shirai	NIT-302	8857

7590 05/06/2003

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EXAMINER

FLORES RUIZ, DELMA R

ART UNIT PAPER NUMBER

2828

DATE MAILED: 05/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/942,718

Applicant(s)

SHIRAI ET AL.

Examiner

Delma R. Flores Ruiz

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

*Paul IP*  
**PAUL IP**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Tohyama et al (5,642,371).

***Regarding claim 1***, Tohyama discloses a module for optical communication having modulator integrated laser includes a semiconductor laser active (see Figs. 16 – 18, Character 55, Column 14, lines 57 – 67, Column 15, lines 1 – 6) and, an optical modulation region (Column 13, lines 4 – 11, Column 20, lines 23 – 34) for modulating the light from the semiconductor laser active region and a temperature control region (see Figs. 16 – 18, Character 70, Column 2, lines 27 – 37, Column 3, lines 5 – 67, Column 10, lines 6 – 17, Column 15, lines 39 – 49) for controlling temperature of at least the optical modulation region, said semiconductor laser active region having a

multiple quantum well structure (see Figs. 16 – 18, Character 55 and 53) having at least two quaternary mixed crystal layers in which a band offset of conduction band is larger than a band offset of a valence electron band, said at least two quaternary mixed crystal layers being selected from the group consisting of quaternary mixed compound of In, Ga, Al and As and a quaternary mixed compound of Un, Ga, N and As (see Figs. 27A to 27 C, Column 24, lines 56 – 67, Column 25, lines 1 – 39), wherein a semiconductor laser active region or temperature of a component in thermal contact with the semiconductor laser active region for holding the temperature of the semiconductor laser active region is set to 35<sup>0</sup> C or higher during operation of the semiconductor laser active region and the optical modulation region (see Fig. 28)

**Regarding claims 2 – 3** Tohyama discloses the temperature control component is a heating component or a heater and the control temperature control component is disposed without having a cooling component (see Figs. 16 – 18, Character 70, Column 2, lines 27 – 37, Column 3, lines 5 – 67, Column 10, lines 6 – 17, Column 15, lines 39 – 49).

**Regarding claim 4** Tohyama disclose a temperature of at least the semiconductor laser active region or the temperature control component in thermal in with the semiconductor laser active region for holding the semiconductor laser active

region is to 30° C or higher during operation of the semiconductor laser active region and the optical modulator region (see Fig. 28).

**Regarding claims 5 and 11,** Tohyama discloses a module for optical communication having a modulator integrated laser includes a semiconductor laser active (see Figs. 16 – 18, Character 55, Column 14, lines 57 – 67, Column 15, lines 1 – 6), having at least two active regions, (see Figs. 16 – 18, Character 53 and 55) and an optical modulation region (Column 13, lines 4 – 11, Column 20, lines 23 – 34) for modulating the light from the semiconductor laser active region and a temperature control region (see Figs. 16 – 18, Character 70, Column 2, lines 27 – 37, Column 3, lines 5 – 67, Column 10, lines 6 – 17, Column 15, lines 39 – 49) for the temperature control at least the optical modulation region, said semiconductor laser active region having a multiple quantum well structure (see Figs. 16 – 18, Character 55 and 53) having at least two quaternary mixed crystal layers in which a band offset of a conduction band is larger than a band offset of a valence electron band, said at least two quaternary mixed crystal layers being selected from the group consisting of quaternary mixed compound of In, Ga, Al and As and a quaternary mixed compound of Un, Ga, N and As (see Figs. 27A to 27 C, Column 24, lines 56 – 67, Column 25, lines 1 – 39), wherein a temperature of at least the semiconductor laser active region or semiconductor laser active region for holding the temperature of the semiconductor

laser active region set to 35 C or higher during operation of the semiconductor laser active region and the optical modulation region (See Fig. 28)

**Regarding claims 6 – 7 and 12 – 13,** Tohyama disclose the temperature control component is a heating component or a heater and the control temperature control component is disposed without having a cooling component (see Figs. 16 – 18, Character 70, Column 2, lines 27 – 37, Column 3, lines 5 – 67, Column 10, lines 6 – 17, Column 15, lines 39 – 49).

**Regarding claims 8 and 14,** Tohyama disclose a temperature of at least the semiconductor laser active region or the temperature control component in thermal in with the semiconductor laser active region for holding the semiconductor laser active region is to 30<sup>0</sup> C or higher during operation of the semiconductor laser active region and the optical modulator region (see Fig. 28).

**Regarding claims 9 and 10** Tohyama disclose the semiconductor laser chip region and the optical modulation region are constituted, respectively, with semiconductor chip regions separately from each other and are constituted as semiconductor chip region integrated in one identical substrate (see Figs 16 – 18).

### ***Response to Arguments***

Applicant's arguments with respect to claims 1 - 14 have been considered but are moot in view of the new ground(s) of rejection. Applicants amendments raised new issues that made necessary the new art to be applied and therefore, the arguments presented against Tohyama et al are said to be moot due to the new grounds of rejection. Applicant's amendments have been fully addressed by the above presented rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

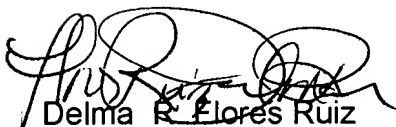
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Delma R. Flores Ruiz whose telephone number is (703) 308-6238. The examiner can normally be reached on M - F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3431.

  
Delma R. Flores Ruiz  
Examiner  
Art Unit 2828  
DRFR/PI  
April 30, 2003

  
Paul Ip  
Supervisor Patent Examiner  
Art Unit 2828